1. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-605}{11}} + \sqrt{0}i$$

A. Not a Complex Number

B. Irrational

C. Nonreal Complex

D. Pure Imaginary

E. Rational

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2. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{100}{529}}$$

A. Rational

B. Not a Real number

C. Integer

D. Whole

E. Irrational

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3. Choose the **smallest** set of Real numbers that the number below belongs to.

$$-\sqrt{\frac{25}{361}}$$

A. Irrational

B. Not a Real number

C. Integer

D. Rational

E. Whole

4. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{-9 + 66i}{-3 - 8i}$$

A. $a \in [-7, -6.5]$ and $b \in [-270.5, -269.5]$

B. $a \in [7, 8]$ and $b \in [-3, -0.5]$

C. $a \in [-7, -6.5]$ and $b \in [-5, -2.5]$

D. $a \in [-502, -500.5]$ and $b \in [-5, -2.5]$

E. $a \in [1.5, 4.5]$ and $b \in [-9, -8]$

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5. Simplify the expression below and choose the interval the simplification is contained within.

$$4 - 7 \div 17 * 2 - (6 * 19)$$

A. $[-53.69, -53.25]$

B. $[-111.58, -110.57]$

C. $[-110.65, -109.21]$

D. $[117.44, 117.85]$

E. None of the above

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6. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$\frac{27 - 77i}{6 - 5i}$$

A. $a \in [3.5, 5]$ and $b \in [15, 16.5]$

B. $a \in [546, 547.5]$ and $b \in [-6.5, -5]$

C. $a \in [-4, -3]$ and $b \in [-11, -9.5]$

D. $a \in [7.5, 9.5]$ and $b \in [-328.5, -326.5]$

E. $a \in [7.5, 9.5]$ and $b \in [-6.5, -5]$

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7. Choose the **smallest** set of Complex numbers that the number below belongs to.

$$\sqrt{\frac{-567}{9}} + \sqrt{0}i$$

A. Not a Complex Number

B. Nonreal Complex

C. Irrational

D. Pure Imaginary

E. Rational

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8. Simplify the expression below and choose the interval the simplification is contained within.

$$1 - 19 \div 20 * 13 - (16 * 2)$$

A. $[-34.07, -25.07]$

B. $[30.93, 34.93]$

C. $[-57.7, -48.7]$

D. $[-49.35, -36.35]$

E. None of the above

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9. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(7 - 3i)(-5 - 2i)$$

A. $a \in [-42, -36]$ and $b \in [-1.04, -0.04]$

B. $a \in [-33, -27]$ and $b \in [27.6, 29.73]$

C. $a \in [-42, -36]$ and $b \in [0.39, 2.65]$

D. $a \in [-37, -32]$ and $b \in [4.68, 7.26]$

E. $a \in [-33, -27]$ and $b \in [-29.61, -28.87]$

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10. Simplify the expression below into the form $a + bi$. Then, choose the intervals that a and b belong to.

$$(-8 - 10i)(9 + 5i)$$

A. $a \in [-23, -17]$ and $b \in [-132, -123]$

B. $a \in [-75, -64]$ and $b \in [-55, -49]$

C. $a \in [-23, -17]$ and $b \in [127, 131]$

D. $a \in [-123, -118]$ and $b \in [45, 51]$

E. $a \in [-123, -118]$ and $b \in [-55, -49]$
